



Video

Hi8

SONY®



# Hi8 Setting new standards

Sony High Band Metal-E video tape: the high performance tape that has made possible this major leap forward in 8 mm videography. It captures images of even more breathtaking reality, and reproduces those images on playback with improved accuracy and clarity.

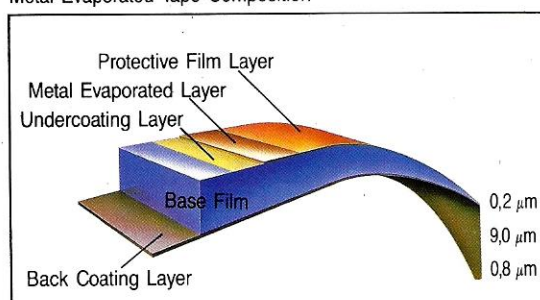
High Band tape is manufactured using a technology completely new to video. Vacuum evaporation coating - a highly complex process mastered by Sony through unrivalled experience and expertise in tape production - deposits a thin film of magnetic



material onto the base layer. Ultra-fine crystals, combined with the elimination of the binder required in conventional coating, allow High Band videocassettes to achieve up to 5dB higher signal output, with significantly less noise, than standard metal particle tape.

High Band videocassettes offer superb quality in recording up to 3 hours (LP) of material. Unsurpassed tape uniformity, high density recording and smooth-running performance also make High Band the ideal medium for post-processing through multiple generations. Once again, Sony demonstrates its world leadership in the application of innovative techniques. Sony continues to advance the standards of quality demanded by professionals and enthusiasts alike.

Metal Evaporated Tape Composition



# Hi8 - Capturing the video world

Video recordings which come closer to actuality, which allow you to capture and preserve images, either of the real world or those generated by your creative use of the medium. Images with the power to seize the attention by their vividness and startling clarity.

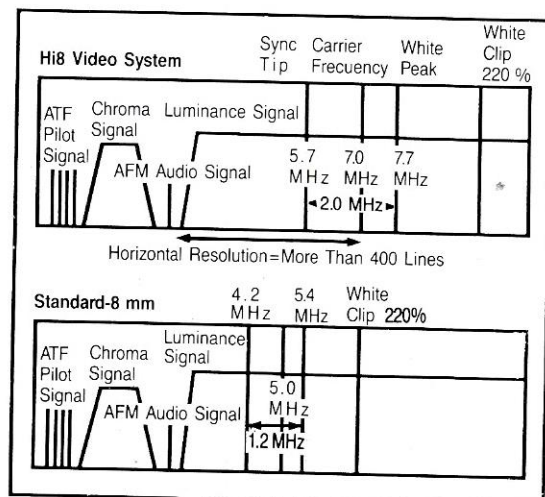
Beyond all questions of technological superiority and hardware excellence, these are the ultimate design criteria of the Sony approach.

As in so many fields, Sony was the pioneer in the 8 mm video market. Lightweight, high performance camcorders using compact metal tape cassettes offering ample recording time had self-evident advantages for both professional and serious home video users. Their portability and versatility added new dimensions to what was possible in making high quality, creative video recordings.

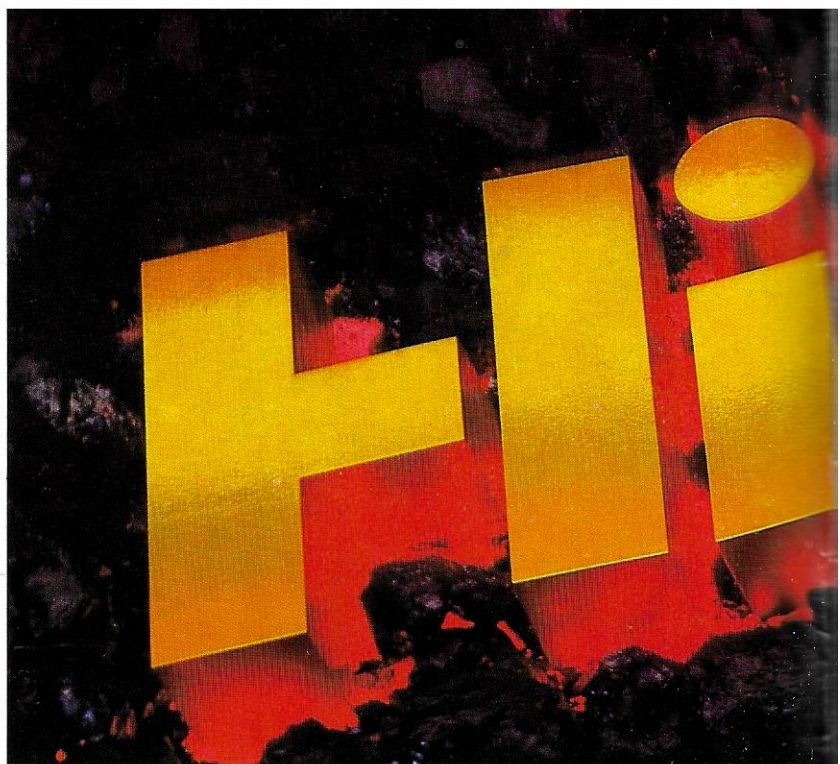
With High Band, once again Sony takes the initiative. A higher and broader bandwidth almost doubles horizontal picture resolution. To gain the full benefits of this amazing increase, High Band also achieves a much higher signal to noise ratio. The result: superb picture quality, with more visual detail, lifelike colour and crispness than ever before.

## Enhanced resolution

In developing the High Band video system, Sony has boosted the carrier frequency for the luminance signal from 5.0 MHz right up to 7.0 MHz. This broader bandwidth provides a horizontal resolution of over 400 lines - in comparison with the 250 lines of conventional 8 mm camcorder recordings. Even finer details of your subject are captured and preserved, in video images or improved clarity and realism.







## Enhanced S/N ratio

Although 8 mm video already offers you an exceptionally low signal to noise ratio, Sony have improved this vital characteristic still further. By expanding the luminance frequency deviation from 1.2 to 2 MHz, the High Band video system ensures that the same level of noise becomes even less significant when compared with the video signal - minimising the impact of noise on the video image. [Subhead:]

## Enhanced video waveform

To reduce edge noise at colour and contrast boundaries, all video recording systems use a pre-emphasis process to reduce high frequency noise, similar to that of audio noise reduction. The High Band video system combines the already high level (220 %) of Sony's white clip process with a new pre-emphasis technique using a shorter time constant of 0.47 microseconds as opposed to 1.3 microseconds, reducing edge noise to 1/3 of that of standard 8 mm video. The result is a clearer image, reproducing original pictures more accurately and providing an extra margin of excellence during editing and dubbing.

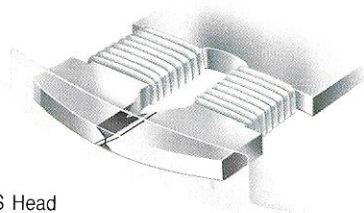






## Enhanced hardware

To match the enhancements in High Band tape and signal processing technologies, the video recording heads incorporated into the High Band camcorder and deck components have also been refined and improved. The new TSS (Tilted Sendust Sputtered) Head design has a narrower head gap, in order to exploit to the full the high frequency signal of the High Band video system.



New TSS Head

So that the improved head/tape combination performs right up to specification, a new Tape Stabiliser Transport System has been incorporated into the High Band deck. This ensures that tape is delivered to the TSS Head in a rock-steady orientation, to eliminate the slightest effects of tape 'wander'.

In addition, even higher picture quality can be enjoyed when the High Band camcorder or deck is linked to a TV or monitor using Y/C Separate (S Video) connections, rather than standard composite video cable. By separating luminance and chrominance signals, dubbing and editing operations can maintain the highest quality image, with reduced colour interference or 'dot crawl' distortion along colour borders.



## **Upward compatibility**

All Sony High Band video system equipment components offer switching facilities so that the appropriate recording technology is selected automatically to suit the cassette type used - High Band video system for High Band Metal-E tape, and standard 8 mm system for standard 8 mm videocassettes.

The choice is yours: if you wish to produce recordings for use on a standard 8 mm deck, you can use standard 8 mm tape in the High Band camcorder. Similarly, pre-recorded films, and your own recordings made using the standard 8 mm format, can be played back using the High Band deck.

The High Band video system has been developed by Sony to take 8 mm video into an extraordinary new world of sharpness and detail. It enables you to produce a video master tape that holds its superb high resolution images through generation after generation of editing and dubbing, the integrated Sony High Band video system of advanced camcorder, deck and magnetic tape technologies is your opportunity to move into the future of creativity and communication using the video medium.



# Hi8 - Integrated advances in technology

The fundamental improvements to the 8 mm video format incorporated into the new High Band Metal-E videocassette are reflected throughout the Sony High Band video system. Only the best that Sony has to offer in terms of recording, reproduction and editing technologies is capable of realising the crisp, colourful pictures and high fidelity AFM sound which can be captured by High Band tape. That means the latest generations of high performance components, such as the 2/3", 495,000 pixel CCD built into the High Band camcorder. It means completely redesigned basic elements, such as the new TSS narrow-gap heads of both High Band camcorder and deck. And the use of highly sophisticated electronic techniques which vastly improve horizontal resolution, and sharpen the waveform of the video signal itself. An integrated system of camcorder, deck and accessories, developed to complement the world's most advanced 8 mm tape technology: the Sony High Band video system.

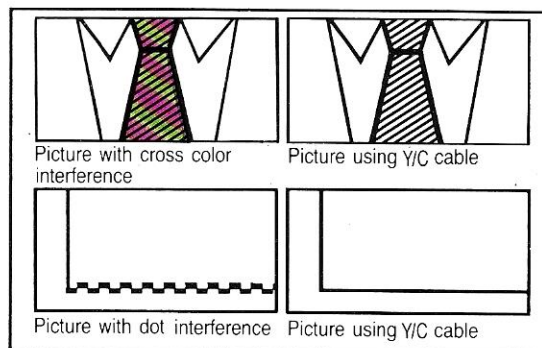




# Connecting your Hi 8 equipment

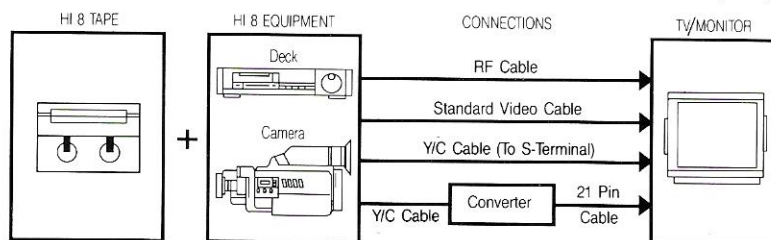
You can use Hi 8 equipment on any TV or monitor. Thanks to the new technologies of High Band video 8 an extremely high resolution is combined with a very good signal to noise ratio, resulting in a Sharp Picture and vivid colours. Of course as in standard video 8, the sound is of hifi quality. If you want to show tapes to friends, a simple connection of the camcorder to the antenna input of the TV set, using the supplied RF connector and RF lead, makes it possible to view tapes on any television.

Better picture is obtained when using the audio/video terminals on both your Hi 8 equipment and your TV set. The picture will be Sharper and



manufacturers TV Sets.

If your TV is equipped with a S-terminal, the ultimate quality is obtained.

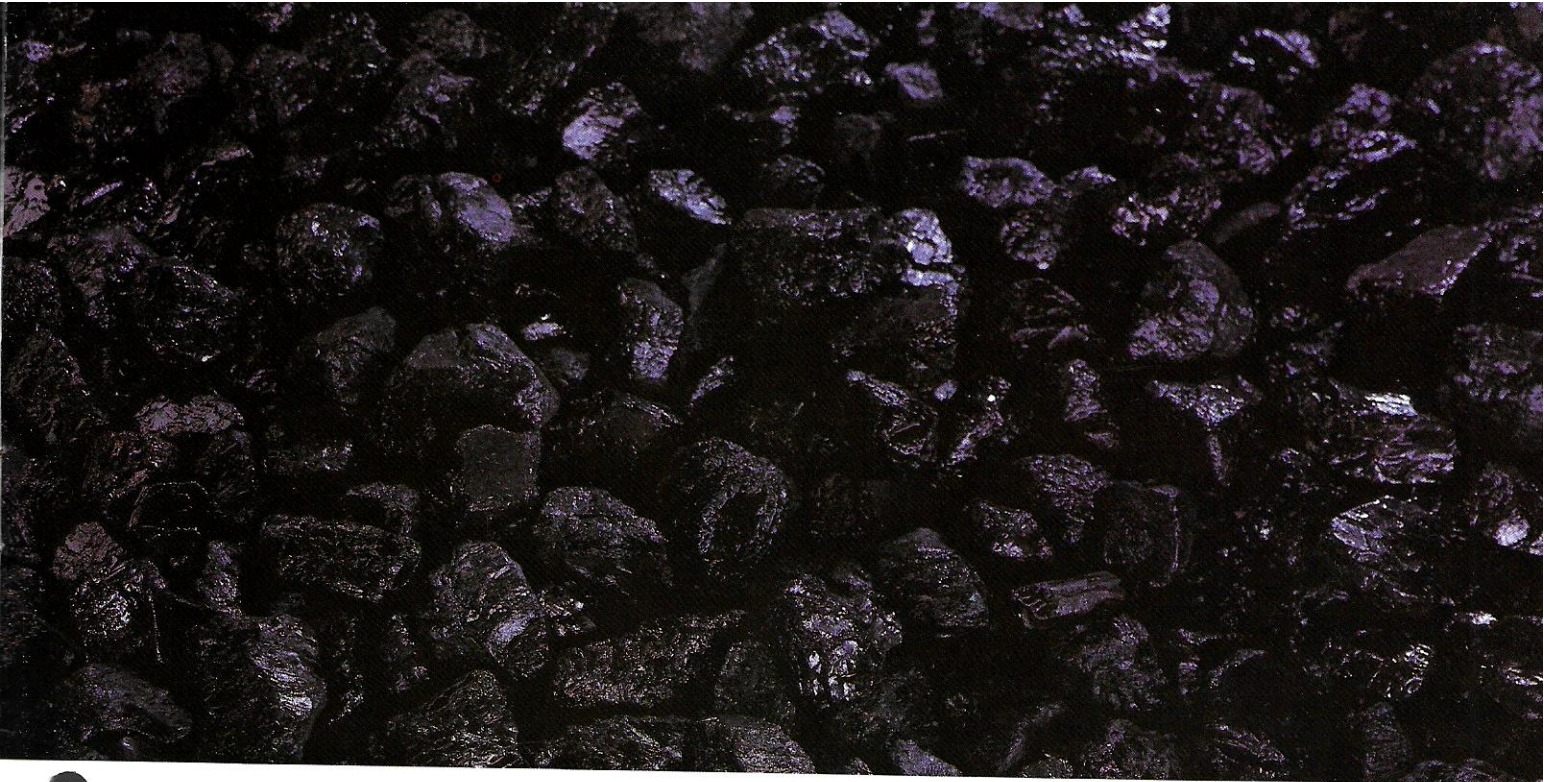


Different connection possibilities

the colour reproduction will be more accurate. Sound will be of the highest quality. This type of connection is available on all current Sony TV Sets and the majority of other

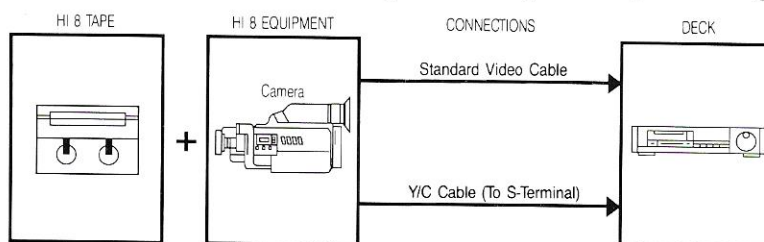
Thanks to the separate treatment of luminance (Y) and chrominance (C) signals, much less cross colour or dot interference will appear, while keeping the maximum resolution. When your TV set has a 21 PIN connection but does not have a S-terminal, and you want to enjoy the best possible quality on your screen, a separate converter can be used. This accessory will convert Y/C signals into RGB signals thus reducing cross colour and dot interference.





For editing tapes various connections with the recording VCR can be used.  
Where as RF connection using the aerial in of the recording VCR is possible, this sollution cannot be recommended because of the (considerable) loss in both picture and sound quality.  
Any up to date VCR offers seperate video/audio inputs, giving improved picture quality when editing.

However the full Hi 8 quality is only preserved when edits are made using the Y/C cable.  
For maximum picture quality the usage of EV-S1000 Hi 8 video recorder is recommended.  
Remarkable pictures, colours and sound will be preserved through various generations when using Hi 8 for both playback and recording.  
Special editing equipment with S-terminals such as RM-E 300 and XV-C 900 are available to allow special effects and titling without loss of picture quality. Recommended connections for editing Hi 8 topes.



Various inputs/outputs on EV-S1000





# CCD-V900 - The Hi8 performance camcorder

The full potential of the High Band concept could not be realised without the ideal creative tool. In the Sony CCD-V900, the High Band system offers you a camcorder with all the versatility and advanced features you need to take advantage of this major breakthrough.

The CCD-900 packs High Band performance, including over 400 line horizontal resolution (and optional three hour capacity using a single cassette), into a highly compact camcorder.

and reliable solid state technology; and virtually no image lag or burn. And a variable shutter provides speeds up to 1/10,000 of a second - the ultimate available from the Sony camcorder range.

Combined with speeds of 1/4000, 1/2000, 1/1000, 1/250, 1/120 and 1/50 of a second, it ensures that you can match the pace of your subject in virtually any lighting conditions, to capture even the fastest moving images to perfection.

The high-performance features of the CCD-V900

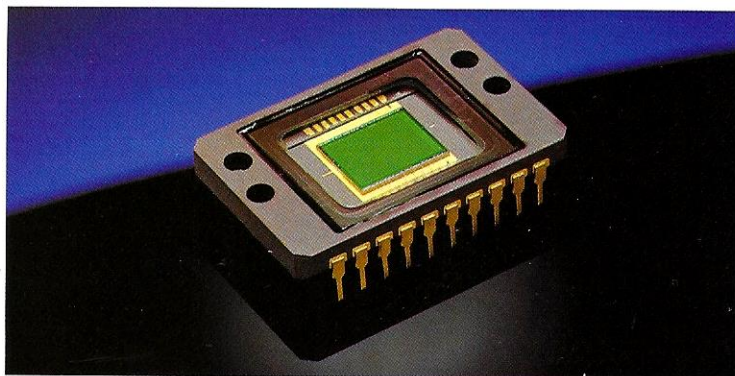
include all those which users of the Sony CCD camcorder range have come to expect - as standard.

Superior low light sensitivity provides finely detailed images at high shutter speeds. A minimum of 4 Lux at 1/50 second shutter speed ensures superb results, even by low artificial light or at twilight.

And an 8.1 variable speed power zoom lens (with macro focusing facility) lets you close right in on your subject, while the dual capsule

microphone can reduce the effects of wind noise.

The many automatic features of the CCD-V900 guarantee high quality results, but manual overrides allow you take full creative control when required.



PRECISION CCD

The latest 2/3" Precision Charged Coupled Device at the heart of the CCD-V900 offers you 495,000 pixels of pin-sharp definition, with over 450 lines of horizontal resolution at the camera block; rugged

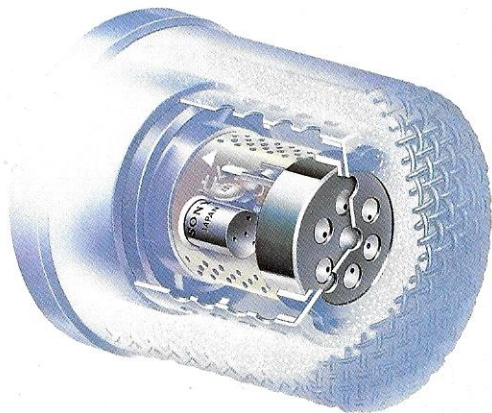




For example, the Through-The-Lens Auto White Balance adjusts colour temperatures automatically, but when lighting conditinos are mixed, Hold Mode adjusts to the source you select. Auto Iris provides accurate exposure control, but you have complete freedom to take command. Similarly, TTL Autofocus responds immediately even to fast-moving subjects, but manual controls enable you to override for creative effects.

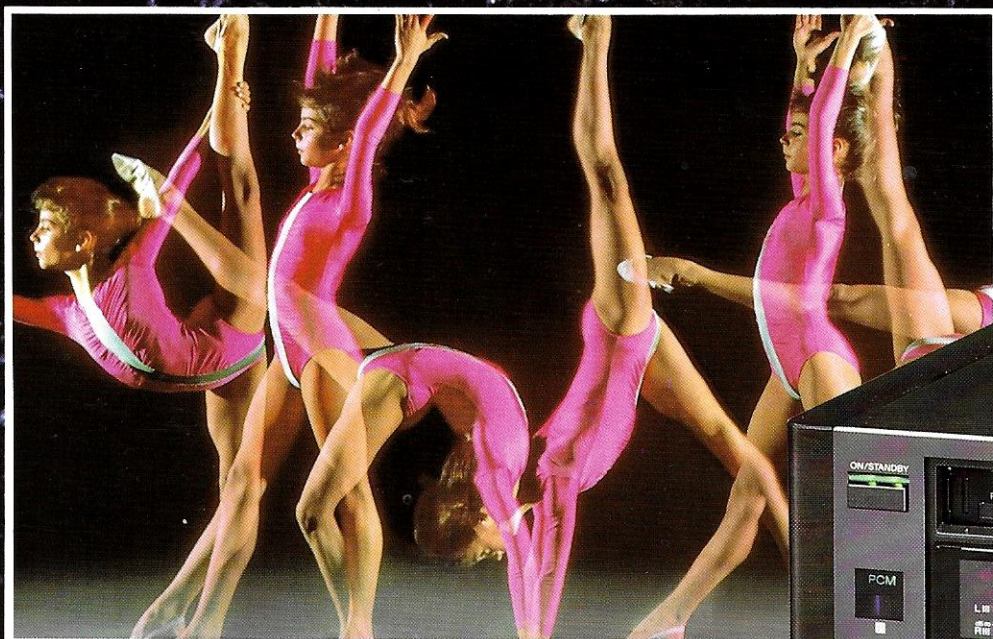
A new 2-page Digital Scrolling Superimposer offers you on-location special effects. Titles and pictures can be memorised in any of eight colours, and then superimposed on your master tape while you record - reversed and/or scrolled from the bottom to top of your image. In addition, Flying Erase Heads ensure noise-free picture transitions, while powerful Edit Mark and Search capabilities facilitate post-processing operations.

The Sony CCD-V900 camcorder: appropriate technology for the world's most advanced 8 mm video system.



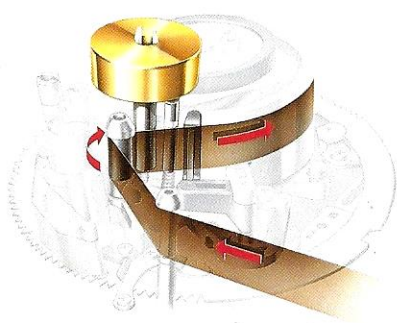
Dual Capsule Microphone





## EV-S1000 - The Hi8 master deck

The High Band system begins with the Sony CCD-V900 camcorder, working in harmony with Sony's High Band tape technology to generate your original sequence of images. To rework the theme, and orchestrate the variations which add the personal touches to your finished creation, the perfect complement is the new Sony EV-S1000 Video Cassette Recorder.



Tape Stabiliser Transport System

A Double azimuth 4-head system, with the new TSS narrow-gap recording head, yields superior image detail, resolution and colour reproduction in both Standard (1 1/2 hours) and Long Play (3 hours) modes. A new Tape Stabiliser Transport System significantly reduces the tape movement which can detract from the crystal clear delivery of your recorded pictures. And a host of advanced editing features, typical of those formerly available

only to professional users, provide you with complete control of the video medium. Yet the EV-S1000 is not only the ideal workstation for high quality video recording, editing and playback. Digital stereo soundtrack dubbing facilities also allow you to enhance your video with high fidelity music or commentary. Recorder provides you with a highly versatile recording and editing instrument which will satisfy the needs of the most discerning video enthusiast. In image processing, it delivers the high resolution picture quality of the High Band video recording system. Multiple assembly and insert editing capabilities are combined with 99-position indexing and sophisticated search facilities, so that you can locate the exact frame you require within a scene.

In search and editing, the sensitive shuttle dial ensures precision tape control to professional standards. A shuttle ring initiates variable high-speed search (in both forward and reverse), slow motion and freeze frame - all with crystal clear picture. As well as providing frame-by-frame advance at your chosen speed, the dial also controls timer programming, TV or monitor channel selection, and audio track indexing functions. In addition, an advanced edit monitor facility allows you to view scenes both from a master tape inserted in the deck, and from a second input such as a camcorder. With two images visible





simultaneously on screen, you can select precise frames from each to be your editing point and then, with the help of the EV-S1000's flying erase heads, carry out exact and flicker-free edits.

The deck's facilities are duplicated by the RMT-424 Remote Commander Unit, offering you all the conveniences of a fully-featured infra-red remote with shuttle precision control. Every function of High Band master editing, VCR operation, channel selection, timer programming, and video and stereo audio tuning are available to you from the comfort of your armchair.

The Sony EV-S1000 High Band Digital Video Recorder: the advanced video deck which allows you to realise the full potential of the Sony High Band video system.



Shuttle Command





# Highband Editing Accessories

So that the supreme quality of your original High Band master recordings can be carried through to your finished video film, the Sony High Band range is complemented by two highly versatile editing accessories.

Enabling you to carry out a wide range of post-production operations, these professional-standard, multi-function units provide you with advanced control of video editing and image processing.

## Sony XV-C900 Video Multi-Colour Corrector

When using S-terminal connections, the XV-C900 provides you with complete freedom to enhance original High Band recordings with wipes and fades, and to process and/or adjust original images to achieve the precise effects you require.

Its many features include:

- \*A selection of seventeen wipe effects, together with a split screen facilities, and fade in/fade out in three colours.

- \*Joystick control of colour balance, for continuous correction of colour casts, or to generate special video effects.

- \*Controlled compensation for main subjects which are too bright or too dark when compared with the background.

- \*Reversal of positive images to negative, or vice versa.

- \*Generation of any of eight background colours.

- \*Chroma noise reduction to compensate for false images created by multi-generation copying.

- \*Audio mixing.





## Sony RM-E300 Video Editing Controller

The RM-E300 provides you with the capability to select scenes from original material, assemble them for automatic recording in your chosen sequence, and to superimpose any titling or images you may require.

The RM-E300 sits between your video source and your recording device - which may comprise any combination of the CCD-V900 - High Band Camcorder, the EV-S1000 High Band Master Deck, or other 8 mm camcorder or Beta/VHS VCR (with appropriate connectors).

Main features of the RM-E300 include:

- \*Separate tape transport control for video source and video recorder.
- \*Automatic assembly editing of up to eight scenes from your video original, with precision editing ensured by memorised cut-in/cut-out counter numbers.
- \*Superimposition of character titles created using the RM-E300 keyboard.
- \*Superimposition of images memorised from the video source input.
- \*Large Liquid Crystal Display of all editing data.



| CCD-V900 TECHNICAL SPECIFICATIONS |   |
|-----------------------------------|---|
| CAMERA PART                       |   |
| Lens:                             | Combined 8 x power zoom with macro<br>F 1.4, f=11-88 mm, filter diameter 52 mm  |
| Focus system:                     | TTL (through the lens) Autofocus  |
| Colour temperature:               | TTL Auto White Balance  |
| Minimum Illumination:             | 5 Lux   |
| Shutter speeds:                   | 1/50, 1/120, 1/250, 1/1000, 1/2000, 1/4000, 1/10000   |
| Image device:                     | 2/3" Precision CCD<br>with 495000 pixels (440000 EFF)   |
| Camera resolution:                | More than 400 lines   |
| Iris:                             | Automatic and manual control  |
| Microphone:                       | Electret Condenser Mic. Dual Capsule  |
| RECORDER PART                     |   |
| Viewfinder:                       | Electric viewfinder (0.7" Black and white)  |
| Video format:                     | Hi8 (using Hi8 tape)<br>Video 8 (on standard or Hi8 tape)   |
| Audio recording system:           | Rotary Head, FM System (HIFI)   |
| Recording/Playback time:          | SP: 90 min. (E5-90, P5-90)<br>LP: 180 min. (E5-90, P5-90)   |
| Video resolution (Hi8):           | More than 400 lines   |
| SPECIAL FUNCTIONS                 |   |
| Functions:                        | Audio/Video insert<br>Digital superimpose titler 2 pages 8 colours, scroll, reverse<br>Date/time insert<br>Record Review, Edit Search, Index Search<br>White Fader, Black Fader (using iris control)<br>Clean still/slow/frame advance<br>Edit switch |
| GENERAL                           |   |
| Weight (w/o tape, battery):       | 1.5 Kg  |
| Dimension (W/H/D):                | 126 x 136 x 352 mm  |

| EV-S1000 TECHNICAL SPECIFICATIONS |   |
|-----------------------------------|---|
| Video format:                     | Hi8 (using Hi8 tape)<br>Video 8 (on standard or Hi8 tape)   |
| Audio recording system:           | Rotary Head, FM System (2 CH), PCM System (2 CH)  |
| Recording/Playback time:          | SP: 90 min. LP: 180 min (E5-90, P5-90)  |
| Video Resolution (Hi8):           | More than 400 lines   |
| Audio frequency:                  | 20 Hz-15 KHz (PCM), 30 Hz-15 KHz (FM)   |
| Audio Dynamic range:              | More than 90 dB (PCM), more than 70 dB (FM)   |
| Wow and Flutter                   | Less than 0.005 % RMS (PCM, FM)   |
| TUNER SECTION                     |   |
| Channel Coverage:                 | VHF, UHF, cable, Hyperband  |
| Presets:                          | 60  |
| Stereo/Bilingual System:          | West german two carrier system  |
| TIMER                             |   |
| Timer:                            | Crystal clock with 24 hour cycle, 1 hour backup, 6 events/1 month,<br>VPS system build-in   |
| SPECIAL FUNCTIONS                 |   |
| Functions:                        | Edit monitor<br>Synchro Edit, Shuttle Edit (camcorder and self control dial)<br>Audio Dub (PCM Track)<br>Index Search<br>Auto Menu<br>Clean still/slow/frame advance/double speed<br>Digital still<br>Digital picture in picture with TV Scan |
| GENERAL                           |   |
| Weight:                           | 6.5 Kg  |
| Dimension (W/H/D):                | 470 x 105 x 305 mm (with side wood panel)   |

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**SONY**®